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| GE TRADING & LICENSING 1 RESEARCH CIRCLE ATTN: BRANDON, K1 - 2C11 NISKAYUNA, NY 12309 | | | EXAMINER VO, LILIAN | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/672,236 | Applicant(s) CHANG ET AL. | |
| | Examiner Lilian Vo | Art Unit 2195 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 1 – 23 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 16-19, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth et al. (USPN 5,764,915) (hereinafter Heimsoth) in view of Broder et al. (USPN 5,991,808) (hereinafter Broder).

4. As per **claim 1**, Heimsoth teaches the invention as claimed, including a computer system for optimizing processing of an annotation request from a client, comprising:

a request processor for receiving said annotation request from said client and to break said annotation request down into a plurality of constituent tasks (Fig. element 22, col. 22, lines 13 – 45, col. 24 lines 27 – 63, col. 25 lines 37 - 63);

a thread-controlling means for maintaining a plurality of threads (col. 21 lines 45 - 56);

an assigning means for assigning said plurality of threads to said plurality of constituent tasks in said task queue (col. 22 lines 13-25); and

task execution means for concurrently executing the plurality of constituent tasks in the respective plurality of threads on the request processor (col. 24 lines 37 – 63).

Broder teaches the invention as claimed, including a task queue for storing a plurality of constituent tasks that need to be performed for said annotation request (col. 4 lines 21 - 28). It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder, as Broder provides an added dimension of schedulability to the design of Heimsoth. Heimsoth discusses dynamically allocating threads from the thread pool, but is silent regarding as to how to deal with excess requests. By including a FIFO task queue, additional tasks can be held at the server, thereby increasing the parallel processing capabilities of the system.

5. As per **claim 2**, Heimsoth teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of threads is independent from said plurality of constituent tasks stored in said task queue (col. 22 lines 26 - 45).

6. As per **claim 3**, Heimsoth teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of threads is persistent (col. 23 lines 8 - 33).

7. As per **claim 4**, Broder teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks is arranged in a substantially first-in-first-out basis within said task queue (col. 4 lines 21 - 28).

8. As per **claim 5**, Heimsoth teaches the invention as claimed, including a computer system according to claim 1, wherein when a thread is available for assignment, said thread is assigned to a constituent task when said constituent task is ready for execution (co. 24 lines 37 - 63).

9. As per **claim 6**, Heimsoth teaches the invention as claimed, including a computer system according to claim 5, wherein said assigned thread is released upon conclusion of said constituent task (col. 24 lines 64 - col. 25 line 4).

10. As per **claims 16 - 19 and 22**, similar limitations are presented as those in claims 1 - 3 and 6. It is noted that in claim 16, the tasks are referred to as "requisite tasks" as opposed to "constituent tasks." However, as Heimsoth is related to a multithreading environment, it can safely be assumed that all tasks to be performed in the system will be subject to multithreading requirements. As such, an operating system thread must be allocated as well as I/O threads and other such essential, i.e. "requisite" system threads. Since these are required for the successful operation of the system, it follows that Heimsoth covers requisite tasks as well as constituent tasks.

11. As per **claim 23**, Heimsoth teaches the invention as claimed, including a method according to claim 19, wherein said assigning of said available thread to said constituent task is independent of the nature of said constituent task (col. 25 lines 37-63).

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of Bahr.

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13. As per **claim 7**, Bahr teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes checking a cache to determine whether information pertaining to said annotation request is present in said cache (col. 4 lines 7-20).

As Bahr teaches increasing the number of tasks executed in cache, Bahr inherently must check the cache to determine if information pertaining to that task is present in the cache. It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with Bahr since allowing tasks to execute in cache would significantly increase performance by saving the processing time of looking up the information regarding a task each time it is executed. Retrieval from persistent memory or from the disk is an expensive and time-consuming operation. To store task information in cache would greatly reduce pre-processing overhead.

14. Claims 8 - 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of Bauer (USPN 5,877,759).

15. As per **claims 8 - 9**, Bauer teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes retrieving information pertaining to said annotation request from one or more sources, wherein said one or more sources include the Internet (col. 7 lines 45 - 57). It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with Bauer since Bauer provides a way of ensuring that

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the it against another information regarding a task is completely up to date by checking resource.

In this way, the most accurate results are obtained.

16. Claims 10 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of van Hoff (USPN 5,822,539).

17. As per **claim 10**, van Hoff teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes annotating a retrieved web page with additional hyperlinks (col. 5 lines 26 - 55). It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with van Hoff as Internet use for commercial purposes is ever increasing, such that providing information to a user pertaining to resources the user is interested in has a marketable benefit. van Hoff provides a way of supplementing Heimsoth and Broder by providing a function may result in a gain in revenue.

18. As per **claim 11**, van Hoff teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes updating a cache with annotated information (col. 1 lines 39 - 55).

19. Claims 12 - 15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of Spix et al. (USPN 5,179,702) (hereinafter Spix).

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20. As per **claim 12**, Spix teaches the invention as claimed, including a computer system according to claim 1, further comprising:

an I/O queue for storing a plurality of I/O tasks identified from said plurality of constituent tasks, wherein said plurality of I/O tasks only perform input and/or output functions (col. 15 lines 3-27).

It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with Spix since Spix shows how to achieve full functionality of a multithreaded system. The system must be able to perform I/O operations as well as run an operating system while performing the claimed annotation. In this sense, Spix provides a way of queuing I/O tasks in a way that the system can perform input and output functions without interrupting the operating system functions.

21. As per **claim 13**, Spix teaches the invention as claimed, including a computer system according to claim 12, wherein two or more of said plurality of I/O tasks are executed in a parallel manner (col. 14 line 61 - col. 15 line 2).

22. As per **claim 14**, Heimsoth teaches the invention as claimed, including a computer system according to claim 12, wherein said task queue is notified upon completion of each of said plurality of I/O tasks (col. 25 lines 5-12).

23. As per **claim 15**, the examiner takes an "Official Notice" that a computer system according to claim 14, wherein upon said notification one or more of said plurality of constituent

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tasks which require results from said executed I/O tasks are rendered ready for execution is considered well known and expected feature in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature such as to wait until a specific task has completed due to data dependencies and other related dependencies to as modified Heimsoth to satisfy the execution order.

24. As per **claims 20 – 21**, similar limitations are presented as those in claims 12 – 13 and 15.

Response to Arguments

25. Applicant's arguments filed 5/24/07 have been fully considered but they are not persuasive for the reasons set forth below.

26. Applicant argues that Heimsoth “does not disclose task execution means for executing the plurality of constituent tasks in the respective plurality of threads. This is because the threads in Heimsoth et al. are not used for task execution but for session management” (page 3 5th paragraph), the examiner disagrees. First, this limitation which applicant argues claim nothing more than that tasks are to be executed in the respective assigned plurality of threads. Heimsoth clearly discloses such features in col. 24 lines 37 – 63. The claim merely recites the task execution is on the request processor (server), in other words the server processes (executes) the task. This is exactly what Heimsoth discloses in which he states “...fig. 8B, is the process on the server side for assigning server thread in thread pool to service client requests and adjusting the number of threads in the pool. In step 611, a server threads is assigned to a client request for the

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duration of time required for processing the client request...” (col. 24 lines 37 – 63), thus clearly read on the claims.

With respect to applicant’s remark that thread in Heimsoth are not used for task execution but for session management, applicant to note that the thread sessions are associated with the tasks. Therefore, thread session is only generated/initialized if there is task to be performed. Furthermore, the examiner has interpreted the claim language as broadly as possible. It is also the examiner’s position that applicant has not yet submitted claims drawn to limitations, which define the operation of applicant’s disclosed invention in a manner that distinguishes over the prior art. Failure for applicant to significantly narrow definition/scope of the claims implies the applicant intends broad interpretation be given to the claims. The examiner has interpreted the claims with scope parallel to the applicant in the response and reiterated the need for applicant to define the claimed invention more clearly and distinctly.

Regarding applicant’s remark from col. 22 line 61 – col. 23 line 7 in Heimsoth, this passage was never cited in the office action. Furthermore, this passage merely states that the client tasks (client requests) are sent before the threads are assigned. It does not state that tasks are executed before the threads are assigned.

27. Because Applicants have failed to challenge any of the examiner's “Official Notice” in proper and seasonably manner, they are now considered as admitted prior art. See MPEP 2144.03.

However, with respect to applicant’s request for clarification of the “Office Notice” taken by the examiner, the examiner is not sure why additional clarification is needed when the office

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action clearly state that the feature is considered well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature such as to wait until a specific task has completed due to data dependencies and other related dependencies to as modified Heimsoth to satisfy the execution order.

Conclusion

28. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Thursday 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lilian Vo
Examiner
Art Unit 2195

lv
July 30, 2007



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